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ABSTRACT

This final report is a product of a Preservation Planning Program (PPP) self-study conducted by the Colorado State University Library (CSUL) working with the Association of Research Libraries' (ARL) Office of Management Studies (OMS). Designed to put self-help tools into the hands of library staff responsible for developing plans and procedures for preserving library materials, the PPP self-study is divided into three distinct but interrelated phases. The initial phase included the first of three site visits to CSUL by ARL/OMS staff and resulted in an interim report documenting the institutional setting, previous preservation activities, external factors affecting preservation, and planning assumptions. The data-gathering phase required the creation of three investigative forces averaging six members each. Task forces investigated three areas: physical condition of the collection; environmental conditions of the buildings; and the organizational/communication preservation aspects of the CSUL system. The final phase consisted of synthesizing the three task force reports, determining the ultimate format of the final report, and preparing the study team's recommendations and timetable for phase implementation. This report begins with a discussion of the background of the institution and the external factors related to the current preservation situation. The report than details the specific concerns and interests of Colorado State University. In a final section, the library's implementation plans are presented. The document includes reports on: library administration; physical condition of the collection; environmental conditions within the libraries; preservation education; and disaster preparedness. (THC)

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EDITORS NOTES ON THIS PUBLICATION SERIES

This final report is one of ten in a series resulting from libraries conducting the OMS **Preservation Planning Program** (PPP). A two-year grant from the National Endowment for the Humanities enabled the OMS to select and work with ten Association of Research Libraries members as they conducted the **Preservation Planning Program** and served as demonstration sites for other libraries in their areas. Applications from interested libraries were screened in Fall 1984, and ten libraries were chosen to conduct PPP self-studies from 1984 to 1986.

The **Preservation Planning Program** is designed to put self-help tools into the hands of library staff responsible for developing plans and procedures for preserving library materials. A typical library takes from four to six months to complete the Program, which involves the cooperation of 25 to 30 staff members. Using a structured planning procedure, a manual, and an extensive resource notebook, library staff prepare a detailed action plan for local preservation program development for the next three to five years, with the on-site assistance of a librarian-consultant trained by the Office of Management Studies.

Most PPP final reports being with a discussion of the background of the institution and the external factors related to the current preservation situation. Task force reports then provide details on the specific concerns and interests of the individual sites. In a final section, libraries lay out their implementation plans.

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A PRESERVATION PROGRAM FOR THE COLORADO STATE UNIVERSITY LIBRARIES

The Final Report of the ARL/OMS Preservation Planning Program

December 15, 1985

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I. EXECUTIVE SUMMARY

BACKGROUND

This report is the product of a self-study funded in November 1984 by an ARL/OMS grant. It sets out a preservation planning program and an associated body of preservation recommendations for CSUL. Phase I of the study was conducted with on-site assistance from ARL/OMS personnel. On February 10, 1985, it resulted in an interim report documenting institutional setting, previous preservation activities, external factors affecting preservation, and planning assumptions. Phase II of the study involved data gathering by three task forces: Physical Condition of the Collection; Environmental Conditions in the Buildings; and Organizational/Communication Aspects of Preservation. That work was completed, and Phase III commenced on April 18, 1985. Its purposes were to synthesize the three task force reports into a final document.

ADMINISTRATION

The Study Team recommends that the Preservation Librarian be placed in the Collection Services Division. Further recommendations are that a classified Conservation Assistant be employed and that facilities for hands-on conservation work be created somewhere in the Morgan Library or other suitable facility where appropriate utilties and other structural components are already available. An adequate budget should be provided. Including first year salaries and supplies, the estimated amount is $103,600. Finally, with regard to administration, the Study Team emphasizes in the strongest possible terms that wholehearted administrative support is required to make any preservation effort work.

PHYSICAL CONDITION OF THE COLLECTION

Using valid random samples and standard categories, it was determined that 14.8% of material in the Morgan Library and 33.8% in the Storage Facility are in the "poor" category. That is, their use should be limited or denied. Implementation of the following recommendations will alleviate this: 1) Increase the use of acid-free pamphlet boxes; 2) Incorporate preservation concerns into the selection and buying of supplies and into binding operations; 3) Consider replacing material in poor condition with microforms, photocopies, or products of emerging technology; 4) Select materials on acid-free paper when available; 5) Improve shelving methods for all material and all handling, including ILL. 6) Clean books and associated equipment and furniture regularly.

ENVIRONMENTAL CONDITIONS WITHIN THE LIBRARIES

Dust and dirt are major concerns, as are patrons' use of food and drink in the building. Closer monitoring of environmental conditions is necessary, as is better coordination with custodial and physical plant staff on matters that affect environment in the building. Some specific changes to pipes and other equipment are necessary. Shelving needs to be improved in several areas. Ultraviolet light should be screened. Exhibits should be reviewed for security and preservation.

PRESERVATION EDUCATION

Major efforts must be undertaken, with active support from the Libraries administration, to educate staff and patrons about preservation concerns.

DISASTER PREPAREDNESS

A disaster preparedness plan should be written in the near future by the Preservation Librarian.

II. INTRODUCTION

A. Background

The Colorado State University Libraries was awarded a grant by the Association of Research Libraries Office of Management Studies in November 1984 to undertake an assisted self-study with the objective of formulating a Preservation Planning Program and preparing a set of recommendations tailored to the Libraries goals and mission. The Preservation Planning Program was designed to incorporate technical and procedural information about preservation in a structured planning process leading to the phased development of a comprehensive preservation program. The basic assumptions upon which the program is based are: 1. The staff of the CSU Libraries, with proper ARL assistance, is best suited to identify its preservation needs 2. It may take several years to develop a program that meets CSUL preservation requirements 3. It is necessary to anticipate future needs while designing an effective preservation program.

In preparation for the planning study, the Director of Libraries reviewed the available documentation on the ARL Preservation Planning Program, consulted with university and library staff concerning the operation of the program and then selected six members to serve on the Study Team. He subsequently presented the group with its charge: to focus on the investigation and review of the present preservation policies and procedures; to evaluate and analyze the findings and to prepare a report to the Director which should include an outline of a definitive long-range preservation program along with the requirements and implementation schedule. The Director advised the study team members that they were not expected to formulate a full-scale disaster preparedness plan.

B. Methodology

The Study Team was responsible for directing the entire Preservation Planning Program process and for writing the final report. This six-member group was comprised of four professionals and two classified staff members drawn from various key organizational units within the CSUL structure.

The ARL/OMS assisted self-study was divided into three distinct but interrelated phases:

Phase-I - This initial phase began with the first of three site visits to CSUL by ARL/OMS Project Coordinator Jutta Reed-Scott and an ARL intern assistant, Drew Racine. The two consultants presented

an introduction to the basic issues surrounding preservation and then reviewed the procedures used in this study. They were led on a tour of the Libraries' facilities and met with various members of the staff. A six-month time frame was established with June 1, 1985 set as the target date for submitting the Study Team's final report to the Director. A working budget was later set up for the expenditure of the $1,000 in operating funds received as part of the ARL/OMS preservation grant.

Phase-I concluded with the Study Team's preparation of an interim report. This report was a working document intended to provide background information on the institutional setting of the Libraries, the preservation history of the Libraries, external factors affecting preservation activities, and planning assumptions of the study. This interim report was completed by February 10, 1985.

Phase-II - This data-gathering phase required the creation of three investigative task forces averaging six members each. Members of the Study Team chaired each of the task forces to facilitate reporting to and discussion by the full Study Team. Volunteers were solicited for the task forces with the intention of choosing professionals and classifieds from most Divisions and Departments in the Libraries. This goal was met through an enthusiastic response by the Libraries staff.

The task forces were given specific charges and then investigated three areas: the physical condition of the collection, the environmental conditions of the buildings, and the organizational/communication preservation aspects of the CSUL system. Each of the three task forces was responsible for reporting its findings to the Study Team and making recommendations based upon these findings.

The task force examining the physical condition of the collection gathered data using two distinct approaches: 1. Structured random sampling of the main stack areas and the Harmony Storage Facility, now the University Libraries Depository, following the methodology outlined in Buchanan and Coleman's 1979 article, "Deterioration Survey of the Stanford University Libraries Green Library Stack Collection." 2. Visual impressions of virtually all areas, including Special Collections, and non-book formats.

The environmental task force conducted surveys which focused on library preservation problems associated with heat, humidity, light, pollution and support structures in the Morgan Library and the branches. CSU's Environmental Health Club assisted in positioning and monitoring six hygrothermographs and a UV light meter.

Finally, the task force assigned to investigate preservation organization and communication conducted interviews, surveyed preservation-related attitudes among the staff, and researched existing CSUL policies and procedures regarding preservation.

Phase-II concluded with the submission of the task forces reports to the Study Team. Task force members were then discharged with thanks.

Phase-III - Phase-III commenced on April 18, 1985 with the third and final site visit of the two ARL/OMS consultants. The task force reports were reviewed and meetings were held with the Study Team and with the Director. This final phase consisted in synthesizing the three task force reports, determining the ultimate format of the final report, and preparing the Study Team's recommendations and timetable for phased implementation.

The Study Team concluded its charge by submitting its final report to the Director of Libraries during the first week of December 1985.

III. RECOMMENDATIONS

A. ADMINISTRATION

The systematic preservation of materials has emerged as a critical concern with a large segment of the library community. CSUL has demonstrated a substantial commitment to preservation activities in several important ways. Active partcipation in various Association of Research Libraries and Research Libraries Group preservation programs is indicative of CSUL's involvement in this vital area. Because CSUL is striving continuously to improve the overall quality of its preservation methods, the administrative structure surrounding the position of the Preservation Librarian is of paramount importance.

The Preservation Librarian's position was established in 1982, and has been located in the Research Services Division since its inception. Research Services is responsible for investigating library services or activities which demand study and evaluation before becoming operational in nature. Applications of library technology are especially appropriate vehicles for Research Services. One weakness in having placed the Preservation Librarian into what is primarily a research and development unit, is the incumbent's frequent inability to integrate preservation into the day-to-day routines of the several large operational units of the Libraries. Materials Processing performs bindery, marking and repair functons; Circulation is in charge of reshelving, stack maintenance procedures and is the ultimate front line in identifying returned or discharged books/journals requiring minor repairs or major conservation work; and the Collection Services subject librarians daily make preservation-related decisions regarding replacement volumes, conversion to microforms, etc.

The Study Team's primary goal is to recommend an administrative structure for the Preservation Librarian that would best lead to the coordination and consolidation of all preservation activities in a single office. A majority opinion within the Study Team did coalesce around the following set of recommendations:

1. The Preservation Librarian should be transferred from the Research Services to the Collection Services Division. While a strong case could be made for placing the Preservation Librarian into Technical Services or for reporting directly to a central administrative unit, a Study Team majority concluded

that Collection Services could offer the Preservation Librarian a unique opportunity to foster a comprehensive preservation program on a Libraries-wide basis.

Collection Services is a large, operational unit that would provide the appropriate framework needed to establish a close working relationship with the subject librarians. The RLG Preservation Manual indicates that the collection development staff should select wisely among competing preservation needs. "In particular, preservation is an extension of collection development and must be carefully considered as such within each member institution." (p.9)

The recently published ARL SPEC Kit, no. 116, entitled, "Organizing for Preservation in ARL Libraries," notes that ARL libraries are more apt to emphasize a preservation unit's link with collection development if a high percentage of books or journals exhibits deterioriating paper quality and is in need of considerable preservation microfilming or replacement. The April 5, 1985, "Report of the Task Force on the Physical Condition of the Collection" does indicate that 14.8% of the Morgan Library's collection is in poor condition, while 33.8% of the Harmony (now University Libraries Depository) collection is in poor condition. The relatively high percentage of poor quality books in a collection as recent as CSUL's tends to support placing the preservation unit into the Collection Services Division.

2. The preservation unit's emphasis should be in hands-on conservation or repair work and should consist of the Preservation Libraran and one Conservation Assistant (or some such similar title.) This assistant would handle the repairs of library materials. Appropriate equipment and facilities should be provided. One feasible site for the preservation unit is the newly constructed University Libraries Depository on Lake Street. There appears to be ample room in that building, and the ULD does contain a much higher percentage of books rated as being in poor condition according to the April 5, 1985 Task Force Report (see recommendation no.1 above.) Another suitable location is within the Morgan Libary. Room 3 in the basement area would serve the preservation unit's purpose well because of the existing facilities available already in that location. A water faucet and adequate electrical outlets are in place.

   The preservation unit should also consist of either a part-time or full-time LA-IA to assist with clerical routines. Student help could lend some basic clerical support as well.

3. The repair work done at present in the Marking and Repair Section should be broken off from the Materials Processing unit and relocated to the preservation unit. This could involve transferring or retraining existing personnel rather than creating a new classified staff position in the Libraries.

   Study Team members perceived in-house binding and marking operations as stricty routinized processing which should remain

in their present unit. Proper repair work requires specialized preservation training and recognizes the uniqueness of each individual repair operation. Clear standards and guidelines would have to be established to differentiate between the repair and marking processes. These standards could be written jointly by the Preservation Librarian and the Serials Department.

4. A preservation unit should receive a line budget allocation large enough to undertake an effective, hands-on book repair and conservation program. A start-up preservation program would require an initial outlay of approximately $100,000. This figure includes roughly $46,000 in salaries for the Preservation Librarian and the Conservation Assistant. As noted in recommendation no. 3 above, a Conservation Assistant could be drawn from existing staff. These two salaries would already be on the books. Full-time clerical support would require an additional $12,000 in salary. Some use of student help with a part-time classified staff member would reduce this figure somewhat.

   The salary component of the preservation unit would run as follows:

PRESERVATION LIBRARIAN	$30,000	(All
CONSERVATION ASSISTANT	16,000	figures
CLASSIFIED LA-IA (full-time)	12,000	Approximate)
	$58,000	

   The remaining $42,000 in start-up costs would go toward the purchase of supplies and equipment needed to run a preservation shop. Some major purchase items would include:

HYGROTHERMOGRAPHS (6)	$ 3,600	(All
BOARD SHEARER	3,000	Figures
SCORING DEVICE	1,000	Approximate)
MYLAR ENCAPSUATOR	10,000	
FREEZE/DRY CHAMBER	10,000	
BASIC REPAIR SUPPLIES	10,000	
WORKBENCH, CABINETS	2,000	
BOOK PRESS, SEWING FRAME	2,000	
HANDI-BIND (to replace Togic drill)	3,000	
DISASTER SUPPLIES	1,000	
	$45,600	

SALARIES ---	$ 58,000
SUPPLIES ---	45,600
	$103,600

   The cost of general office supplies would be added to this figure.

5. The preservation unit should be charged with plannng and coordinating the initial major libraries-wide cleaning operation. Future cleaning tasks could be incorporated into Circulation staff procedures.

6. The Study Team recommends that the strongest possible administrative support be given toward preservation efforts. The CSUL Administration should stress the importance that it attaches to preservation, both within the formal preservation unit and during the Libraries staff's day-to-day decision making processes and work habits. A staff preservation education program, to be fully developed by the Preservation Librarian would reinforce the better understanding of the hidden preservation-related consequences of the CSUL staff members' regular work routines.

B. PHYSICAL CONDITION OF THE COLLECTION

Assessing the physical condition of the Libraries' collections and proposing a set of recommendations aimed at protecting the various materials housed in the Morgan Library, the remote storage facility and the branches may be regarded as the very core of this assisted self-study. The insured value of the entire CSUL collection is presently estimated at $52 million. A high priority must be given to protecting an investment of this magnitude.

The investigative Task Force on the Physical Condition of the Collection used random sampling techniques based upon Buchanan and Coleman's article entitled, "Deterioration Survey of the Stanford University Libraries Green Library Stack Collection." This approach was supplemented by a series of visual impressions made of various shelving areas. In determining the results of the sampling, the Task Force assigned a higher weighting to paper state than it did to bindings or covers.

CSUL is a middle-sized academic library that houses roughly 1.5 million cataloged items. While a member of both the Association of Research Libraries and the Research Libraries Group, the CSUL's collections do not possess the chronological scope and depth of the nation's premier research institutions. Over 50% of the titles shelved in the University Libraries Depository remote facility were published since 1950, while 50% of the Morgan Library titles were published since 1970. On balance, the collection is relatively young.

Given the relative newness of the CSUL collections, the physical condition of the Libraries' collections exhibits a high percentage of books and periodicals that fall into the poor category. This poor category denotes materials in such an advanced state of disrepair that use should be limited or denied. In the Morgan Library, 14.8% of the collection is scored in poor condition; 22.8% is in moderate condition; while 62.4% is categorized as good. Materials in the recently constructed University Libraries Depository demonstrate more severe preservation urgency. In this facility, 33.8% of the materials are in poor condition; 26.9% in moderate condition; only 39.2 in good condition.

Based upon the Task Force report and numerous discussions within the Study Team itself, the Study Team as a whole makes the following set of recommendations regarding the physical condition of the collection:

TABLE 1

* PHYSICAL CONDITION OF MORGAN AND HARMONY SAMPLES

		Paper			Binding			Covers		
		0	1	2	0	1	2	0	1	2
Morgan n=391	#	260	73	58	323	64	4	299	73	19
	%	66.5	18.7	14.8	82.6	16.4	1.0	76.5	18.7	4.9
Harmony n=390	#	155	107	128	314	66	10	290	78	22
	%	39.7	27.4	32.8	80.5	16.9	2.6	74.4	20.0	5.6

TABLE 2

SCORE (WEIGHTED AVERAGE)

		0	1	2
Morgan n=391	#	244	89	58
	%	62.4	22.8	14.8
Harmony n=390	#	153	105	132
	%	39.2	26.9	33.8

* Harmony is now the Univerity Libraries Depository.

Score interpretation

0 = Good
1 = Moderate
2 = Poor

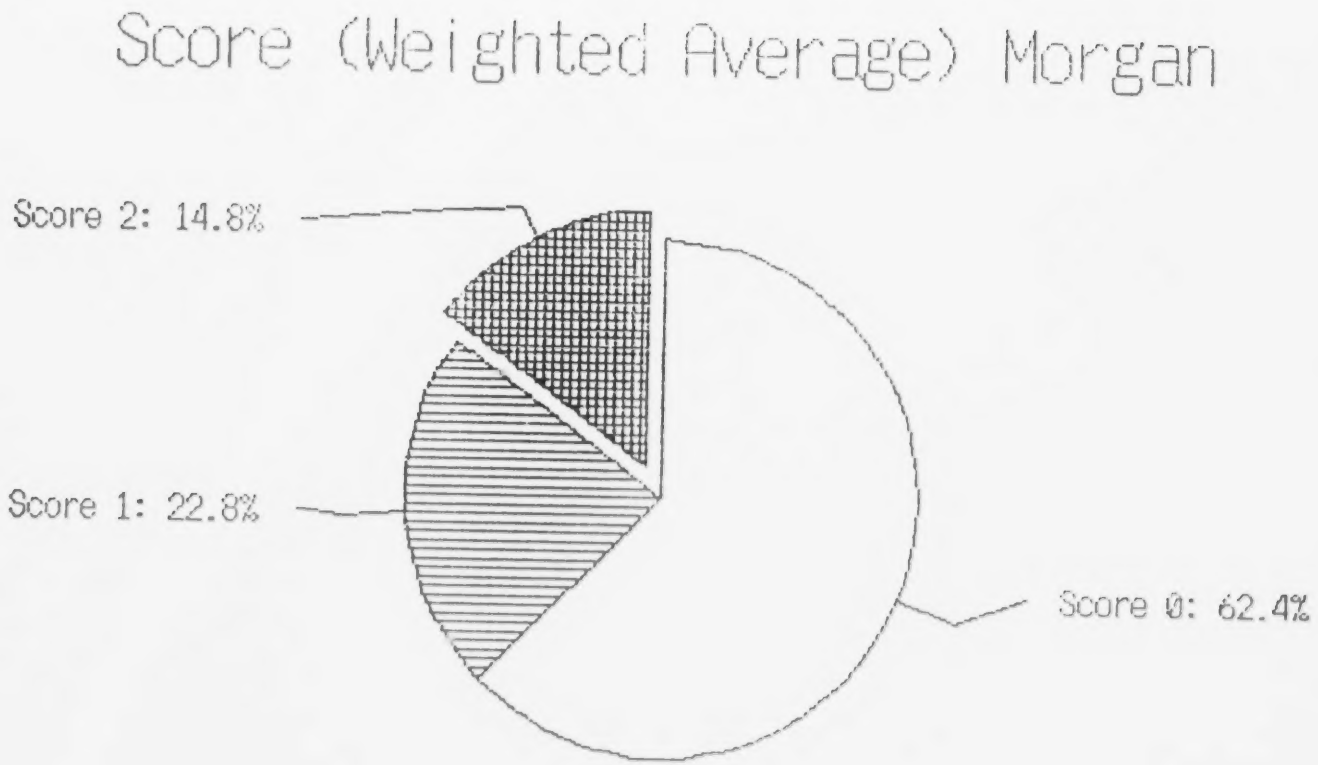

Figure 1

Score interpretation

0 = Good
1 = Moderate
2 = Poor

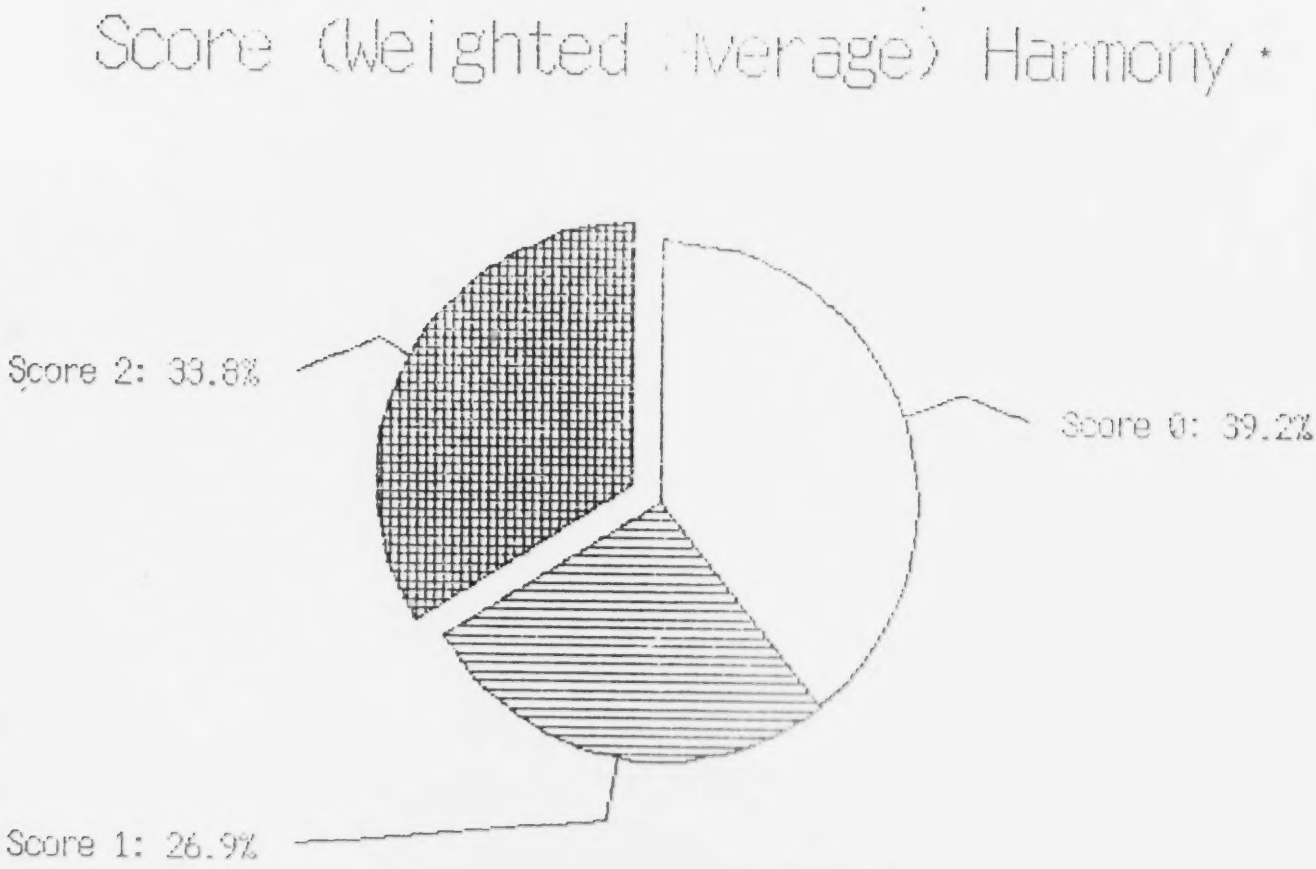

Figure 2

* Harmony is now the University Libraries Depository.

Score interpretation

0 = Good
1 = Moderate
2 = Poor

1. BINDING, REPAIRS AND SUPPLIES

a. Acquire acid-free pam boxes.

The Circulation Department should begin the phased purchase of acid-free pam boxes immediately. These would be used mainly for unbound issues of periodicals.

ADVERSE CONSEQUENCES: Increased repair and binding costs; non-acid-free pam boxes will hasten deterioration of materials.

b. Coordinate the selection and buying of supplies for preservation quality and standards. Proper training in use of these supplies is also recommended.

The Preservation Librarian should implement this recommendation immediately on an ongoing basis. Supply costs and effective communication among various units are factors surrounding implementation. Improper supplies and inadequate training in their use can result in actual harm to books and journals.

ADVERSE CONSEQUENCES: Continued or unintended deterioration of materials.

c. Actively incorporate preservation related concerns into all binding decisions including replacement of the BRODART equipment.

This recommendation should be jointly implemented by the Preservation and Serials Librarians. It would involve all commercial and in-house bindery work.

Factors surrounding implementation involve increased costs for supplies and replacing the BRODART equipment. Regular and ongoing communication between the Preservation and Serials Librarians is required. Incorporating preservation concerns into binding decisions should commence immediately, while replacing BRODART should occur by FY 1986/1987.

ADVERSE CONSEQUENCES: Reduced accessibility and degradation of Libraries records and materials.

2. PRESERVATION AND COLLECTION DEVELOPMENT

a. More actively consider replacement of materials in poor physical condition with microforms, photocopies or products associated with emerging technologies.

The Preservation Librarian, all selectors and various others should begin to carry out this recommendation beginning with FY 1986/1987 and continue onward from that time period.

Several important factors are linked to this recommendation: additional or newer equipment must be purchased; irregularities in the budget structure regarding the source of funding used to purchase microforms must be addressed; availability of alternative replacement formats is a concern; increased public relations efforts aimed at staff and patrons in overcoming resistance to non-book formats must be undertaken.

ADVERSE CONSEQUENCES: Limitation and loss of access to information; reduced or inefficient space allocation.

b. Choose books and journals on permanent, acid-free paper stock when available.

Selectors, Acquisitions and the Preservation Librarian should implement this immediately.

Factors involved are general availability of such items and staff awareness as to their preservation value. The cost differential is presently insignificant, if any.

ADVERSE CONSEQUENCES: Creation of an avoidable preservation problem for the future.

3. SHELVING AND STACK MAINTENANCE

a. Improve shelving methods for elephant folio materials.

This recommendation is aimed primarily at atlases or other map-like materials. The Preservation, Circulation and Documents Librarians should coordinate the solution to this shelving problem.

Implementation factors center mainly on costs derived from purchasing atlas cases or other forms of compartmentalized shelving. FY 1986/1987 is the acceptable time frame for action.

ADVERSE CONSEQUENCES: Increased repair costs due to improper handling and storage.

b. Segregate folio from non-folio materials on the first floor, North wing of the Morgan Library.

This recommendation involves the Circulation and Cataloging Departments. Oversized volumes bend out of shape and crush smaller items including pam boxed materials. The word "FOLIO" should be added to CSUL local data elements in RLIN records.

ADVERSE CONSEQUENCES: Increased repair and binding costs; loss of shelving space which would then dictate that a larger number of materials be transferred to the University Libraries Depository remote storage area; less

than ideal neatness and shelving conditions leading to increased labor and maintenance costs.

c. Eliminate all fore-edged shelving.

The Marking unit and Circulation should share the implementing of this recommendation. Time frame is January, 1986 and continuing.

Interdepartmental coordination and the hiring and sharing of student help to monitor and correct this situation are implementation factors.

ADVERSE CONSEQUENCES: Unnecessary rebinding and wrapping of the covers and boards.

d. Utilize properly-sized bookends in all shelving areas.

Primary responsibility will rest with Circulation, but this affects Documents, General Reference and Science Reference as well. Purchase of appropriately-sized bookends should begin immediately and costs phased in over the next five years.

ADVERSE CONSEQUENCES: Increased repair and binding costs resulting from undersized bookends cutting into bookcovers; overall deterioration of affected materials.

4. PREVENTIVE METHODS

a. Clean the stacks, books, furniture, equipment and the rest of the Libraries on a regular and sustained basis.

The Study Team gives this recommendation a very high priority. Implementation responsibility should reside with the Administrative Assistant in charge of the buildings, the Preservation Librarian and the Circulation Department. Initial cleaning efforts could be orchestrated by the Preservation Librarian and Administrative Assistant, and then switch over to the Circulation Department in an operational mode for ongoing cleaning regimens.

Factors surrounding successful implementation of this recommendation are: training programs, costs involved with hiring hourly staff and purchasing cleaning equipment.

ADVERSE CONSEQUENCES: Disagreeable study and work environment (uncleanliness leads to disrespect of the Libraries and staff by patrons); increased litter by patrons (dust and dirt are injurious to books and other materials and hasten deterioration).

b. Investigate possibility of participating in a regional deacidification program.

The Preservation Librarian should take a lead role in monitoring state, regional and national developments in this area.

Due to anticipated high costs involved, a long-term perspective should be adopted.

ADVERSE CONSEQUENCES: Hastened deterioration of materials.

c. Continue to monitor collection for special preservation problems.

This entails a sustained collaborative effort involving the Preservation Librarian, selectors, Circulation and Materials Processing. Staff time, enhanced interdepartmental communication and heightened preservation education are implementation factors. The proper time frame is immediate and ongoing.

ADVERSE CONSEQUENCES: Unnoticed deterioration or other preservation problems permeating the stacks or certain segments of the collection.

d. Improve handling of ILL materials.

Recent use of bubble wrap is most helpful. The Interlibrary Loan and Preservation Librarians should establish more comprehensive standards for wrapping items and delivery methods.

Some slight additional costs may be necessary to implement this recommendation as soon as possible.

ADVERSE CONSEQUENCES: Damage to books due to improper handling or shipping methods.

e. Eliminate all book drops during hours that the Morgan Library is open.

Book drops are detrimental to books. Books crash into one another, fall out of overstuffed bins, etc. This is an unnecessary source of stress and physical deterioration for all books and journals placed into book drops.

Implementation factors could involve costs related to acquiring or constructing alternative book return devices. Extra staff time may be needed to accommodate closing the book drops. Time frame: FY1986/1987.

ADVERSE CONSEQUENCES: Needless deterioration of all circulated items returned through book drops.

C. ENVIRONMENTAL CONDITIONS WITHIN THE LIBRARIES

The Environmental Task Force charged with investigating and reporting upon the environmental conditions prevalent in the Morgan Library and the branch libraries discovered that obtaining information regarding the environmental data in these buildings proved quite difficult. One task force member noted that, "It seems that no single person on campus has ready access to precise current data on systems, capacities, capabilities and problems" of the Libraries buildings. This underscores a communication and organizational problem that extends beyond the confines of the Libraries itself. Because the overall environmental quality has such a strong impact on the collections' well-being, the Study Team believes that the Preservation Librarian should serve as a clearinghouse for maintaining information pertaining to all aspects of environmental conditions in the Libraries buildings. Centralizing such information would prove vital for many subsequent preservation programs and management planning activities.

The Environmental Task Force identified the major environmental problem facing the Morgan Library as significant quantities of dirt and dust in all sections of the building. This conclusion was reached independently of the work done by the Task Force on the Physical Condition of the Collection, but serves to reinforce the Study Team's judgement that dust and dirt are indeed the primary preservation obstacles that must be overcome if the collections are to be maintained at optimal storage levels. A recommendation regarding dust and dirt comprises part 4a of section III, B. The branch libraries compared to the Morgan Library are relatively clean.

CSUL's contract with the Custodial Services unit does not require the custodial staff to clean or dust the books or the library stacks. Therefore, these specific cleaning and dusting routines must be built into procedures using the Libraries own staff. At present several collections undertake minimal cleaning of their materials and stack areas, most notably the microform collection, the technical report room and the reference service areas. A systematic approach to cleaning the much larger and more time consuming stack areas would require some properly trained student or staff help. Awareness of dirt's pernicious impact on library materials must be understood by all staff members. The importance of a staff preservation education program is vital in this context (see recommendation 1, section III, D.)

Six hygrothermographs were set up in numerous locations both in the Morgan Library and the three branches. Readings revealed that during the March 1-28, 1985 monitoring period, average temperatures were significantly higher, and relative humidity generally lower than guidelines published in the ARL/OMS Preservation Planning Program (p.40-41) manual. Only the 4th floor, 3rd floor (East), and 2d floor (far North wing) of the Morgan Library recorded average temperatures within the recommended standard of 65° F ± 5 F year-round (see Table 3.) The Atmospheric Sciences Library was the only branch falling within the suggested temperature range by recording an average temperature of 70° F. Relative humidity levels were

TABLE 3

	Average Temp.	Average Humidity
4th floor	60	31%
3rd floor (East)	70	33
2nd floor (East)	74	27
2nd floor (Sci Ref)	77	32
2nd floor (North)	72	31
2nd floor (far North)	70	33
1st floor (North)	75	31
Special Collections	71	30
Reference	74	29
Acquisitions	77	31
Identification	76	29
Basement (far North)	72	32
Basement (North)	73	32
Basement (East)	75	28
Basement (West)	75	28
Serials	79	23
Bindery	73	31
Newspaper area	76	31
Micro Room	74	28

significantly lower than ARL guidelines which recommend 50% ± 5% as the ideal range. All relative humidity levels in the Morgan Library and the branches were generally in the 28-32% range. Excessively low relative humidity can lead to desiccation of books and journals. The climate in Colorado tends to foster low relative humidity.

The Study Team makes the following recommendations regarding environmental conditions in the Morgan Library and the branches:

1. HVAC (Heating, Ventilation and Air Conditioning)

   a. Coordinate the environment of all library buildings with Facilities Maintenance in order to conform to accepted preservation guidelines.

      Such coordination is essential because the CSU Facilities Services Department controls the thermostats throughout the Morgan Library. Staff in the branch libraries also have no control over the HVAC systems. Location of thermostats could also be reviewed.

      This recommendation should be carried out by the Preservation Librarian working closely with the appropriate person(s) of the Libraries' central administrative unit. Such action would centralize information about the various Libraries facilities. Open channels of communication between the Libraries and Facilities Maintenance would benefit both parties in providing a proper framework of cooperation in fostering sound preservation and environmental practices.

      ADVERSE CONSEQUENCES: Steady deterioration of library materials and continued physical discomfort of staff and patrons alike.

   b. Monitor the environmental conditions in all Libraries facilities on a continuous basis.

      The Preservation Librarian should take responsibility for implementing this recommendation.

      Equipment, such as several well-positioned hygrothermographs, would have to be rented or purchased. This equipment would require regular maintenance and security precautions. Supplies of graph paper, etc. would be purchased in conjunction with monitoring equipment. The Study Team recommends spring, 1986 and ongoing as the appropriate time frame.

      ADVERSE CONSEQUENCES: Continued deterioration of all Libraries' materials.

   c. Insulate heating/cooling pipes where needed.

      This in an energy-saving as well as a preservation action. Poorly insulated heating or cooling ducts could skew

thermostat control readings by creating unintended cool or hot spots throughout the buildings. Poorly insulated heating pipes could result in water leaks.

The Assistant to the Director (Administration) should implement this recommendation. Significant labor or materials costs could derive from this proposal. Because of potential costs, the Study Team recommends an implementation date of FY 1987/1988.

ADVERSE CONSEQUENCES: Potential negative effects of improper temperature/humidity levels on the collections.

d. Upgrade the repair priority of the Morgan Library's broken humidifier.

The Morgan Library's humidifier has been in a state of disrepair for a considerable time. Facilities Services personnel have given this unit's repair status a relatively low priority. As seen in Table 3, relative humidity levels were quite low compared to the ARL guidelines' optimal range. Bringing the humidifier back up to service would perhaps place the Morgan Library's relative humidity levels up to standard.

The Assistant to the Director (Administration) should take responsibility for this recommendation. Commitment by the Libraries' administration and some repair costs are factors to be considered. This repair request should receive the very highest priority and the Study Team recommends immediate implementation.

ADVERSE CONSEQUENCES: Continued deterioration of the collection and high levels of staff and patron physical discomfort.

2. SHELVING

a. Increase shelving in all photocopy areas.

Patrons finished with photocopied library materials often place books onto the warm photocopy machines, the floor, or into inadequate and overcrowded shelving areas. The third floor copy machine in particular requires additional return storage space because patrons frequently end up setting books and bound periodicals down on the radiator or the floor.

The Assistant to the Director (Administration) should be charged with arranging for extra book return space near public photocopy machines. This step could involve the purchase of additional shelves or the redistribution of present furniture and/or shelves. The Study Team recommends the purchase of such return shelves by January, 1986.

ADVERSE CONSEQUENCES: Sudden or cumulative deterioration of any photocopied item.

b. Stabilize any and all dangerous shelving areas throughout the Libraries system.

Some book shelving areas at the Atmospheric Sciences Library are too narrow. The Documents folio area has a critical shelving problem. Piles of oversized volumes are shelved in disarray due to inadequate shelving space. Many of these oversized books have been bent out of shape and present a source of potential danger to staff or patrons attempting to extricate any material for consultation.

This is a task for the Assistant to the Director (Administration) working in collaboration with the Preservation Librarian and the various departments involved. Due to the human safety factor, the Study Team urges immediate action on this issue even though there may be significant costs to the Libraries.

ADVERSE CONSEQUENCES: Human safety danger, threat of a lawsuit, damage to library materials.

c. Assess and monitor the housing of maps, microforms and other non-book materials and associated equipment.

Single maps kept in the Documents Department's map collection suffer from cramped storage drawers and are prone to tearing on their sides when removed from these same drawers. Additional map storage facilities are crucial in order to preserve the maps in this heavily used collection.

The drawers of some metal cabinets storing microfilm in the central Microtext Room show signs of oxidation and leaving powdery residues. Fiche housed in the Documents technical report room exhibit overcrowding tendencies.

The assessment and monitoring recommended here should be undertaken by the Preservation Librarian and the various selectors who determine when microform purchases are appropriate. These activities should begin immediately and continue.

ADVERSE CONSEQUENCES: Continued deterioration of non-book materials.

3. ULTRAVIOLET LIGHT.

Screen all light sources emitting potentially damaging levels of ultraviolet light.

Fluorescent lights in the stacks have diffusers attached, but do not contain UV screens. General Electric bulbs used in the

Morgan Library's stack areas rate 88 mu watts per lumen. This rating is somewhat higher than the recommended 75 mu watts level. UV screens would bring the Morgan Library's stacks lighting within accepted standards.

Books shelved near windows often receive direct sunlight. Several shelving areas prone to direct sunlight are the westernmost shelves in the basement's North wing, the third and fourth floors facing the North, and books in the Science Reference areas closest to the windows facing the West. The cost of fully implementing this recommendation could prove considerable. Priority should go to Science Reference, and then to the third and fourth floor areas where direct sunlight poses the most serious threat. The Task Force recommends establishing a five-year, phased plan for screening out all damaging UV light sources. The Auraria and University of Colorado at Boulder libraries now use a 3M product priced at approximately $2.75 per square foot to screen out direct sunlight from some of their windows. Other products may be equally effective.

ADVERSE CONSEQUENCES: Continued deterioration and destruction of materials.

4. EXHIBITS

Review the Morgan Library's exhibit program for security and preservation concerns.

The Exhibits Coordinator, the Preservation Librarian and the designated CSUL Security Officer should examine all security and preservation aspects of exhibits involving personal or CSUL materials. Several members of the Study Team expressed concern over the general lack of preservation knowledge surrounding the mounting and display of Libraries materials during various exhibits. This could be remedied by more direct and sustained communication between the Exhibits Coordinator and the Preservation Librarian.

ADVERSE CONSEQUENCES: Unintended damage to library materials and possible security consequences.

D. PRESERVATION EDUCATION

A close connection exists between the level of staff and patron preservation awareness and the fundamental physical condition of a library's collections. Staff in public or technical services, including professional, classified or student hourly, handle thousands of books, serials and microforms each day. Patrons also handle large numbers of library materials daily, both in library buildings and at home. Unfamiliarity with basic library preservation practices will have a deleterious effect on a library collection. Staff or patron preservation ignorance may lead to unnecessary or inadvertent damage, often irreversible, to library materials.

CSUL now has no Libraries-wide preservation education effort in place aimed at staff or patrons. A truly effective education program must include both staff and patrons. A comprehensive preservation education program should be an ongoing concern and should include a detailed plan of action.

1. STAFF

A major Libraries-wide preservation education plan should be devised and implemented within six months. Past education attempts have been done on an ad-hoc basis by the Preservation Librarian generally acting alone without participation by other staff or Libraries Departments. All professionals and classified staff members should participate in the CSUL preservation education programs. An initial crash education program would serve notice to all Libraries staff that the Director of Libraries and the Administration are serious about the importance and priority attached to inaugurating such an ongoing effort. Previous lukewarm administrative support for preservation activities should be clearly perceived by all staff as no longer a viable mode of operation. Some staff may see attention to preservation concerns as mere additional work or someone else's responsibility. Firm administrative support to counter such misconceptions is crucial to overcome years of inertia.

The Study Team proposes the following broad-gauged recommendation:

Undertake a major program of staff preservation education.

Overall implementation and planning resonsibility should rest with the Preservation Librarian working in close cooperation with all Libraries departments. A Preservation Committee, chaired by the Preservation Librarian, would assist in involving staff drawn from various work units and in ensuring that the education effort continues on a routine basis. Additional commitments of staff members' time and costs of any education effort are obvious implementation factors. Time frame is FY 1986/1987 and ongoing.

ADVERSE CONSEQUENCES: Continued staff ignorance of preservation education concepts and needless deterioration of the collections.

2. PATRONS

Any preservation education aimed at patrons involves a more complex set of circumstances. University level support is required to make a patron education program succeed. Backing from CSU's central administration, colleges and individual departments is a crucial element in guaranteeing that CSUL materials receive proper handling and respect from the University's students and faculty members. CSUL education efforts would be partly vitiated by a lack of cooperation or communication with outside agencies. Injecting basic preserv-

ation education philosophy into CSUL bibliographic instruction programs may offer some unique implementation possibilities.

The following proposal is offered by the Study Team:

Undertake a comprehensive preservation education program aimed at patrons who comprise the Libraries' primary clientele.

This recommendation should be coordinated jointly by the Preservation Librarian and the Coordinator of Library Instruction. A Preservation Committee, mentioned above, could also prove valuable in this effort. Cooperation among the Preservation Librarian, the Coordinator of Library Instruction, the Collection Services Division's subject librarians and the Reference Department would be essential ingredients for success and in reaching out to faculty and students from all departments.

A patron directed education program will involve greater costs than similar staff efforts. Posters, brochures, exhibits, bookmarks and other possible handouts will entail staff time and effort along with modest costs for such materials. While planning for patron education activities could begin by early spring, 1986, actual implementation would commence with FY 1986/1987 on a continuing basis.

ADVERSE CONSEQUENCES: Continued patron ignorance of preservation's importance. General deterioration of CSUL books and journals both in the buildings and at the patrons' homes.

E. DISASTER PREPAREDNESS PLAN

To date incidents resulting in damage to library materials have been limited to leaking roofs and drain pipes backing up. The number of volumes affected has been relatively small. The last incident, when roof leaks damaged several shelves of books and carpeting, pointed up the need for a preparedness plan. Especially evident weaknesses were the time wasted and the inefficient use of staff because of uncoordinated efforts, and the lack of supplies within the building such as plastic to drape over stack units, towels to interleave books, and equipment to clean up water from floors.

The Preservation Librarian has received formal training for disaster recovery at two separate programs and has conducted part of a workshop. Two other staff members, the Reference Librarian and the Stack Supervisor, also participated in the program conducted at the University of Wyoming last fall. The Libraries clearly has knowledgeable resource people available around whom a plan can be developed. There are any number of examples to draw from in modeling a program; however, the committee approach for developing a plan is the most satisfactory, for it increases the awareness of the staff. Also, the plan must cover more than just having a few people identified on whom to call. The ideal situation includes the organization of a disaster recovery team consisting of staff members, each with his or her special assignment and expertise, which would then establish liaisons with persons in charge of the

facilities and coordinate the plan with campus security personnel. The Preservation Librarian should have overall authority to direct the disaster recovery team, keep the plan up-to-date, secure emergency supplies to be maintained on site, and locate readily available sources for other supplies and equipment.

1. Disaster Plan

   a. A committee should be formed to study the Libraries and formulate a plan designed for the Morgan Library and its collections. It is important that the branch libraries also be included in disaster planning.

   b. The committee should include the Preservation Librarian as chair, Circulation Department head, University Archivist, Administrative Assistant in charge of the building, and representatives drawn from the major departments and divisions of the Libraries system.

   c. The plan should be formulated with the aid of the RLG Preservation Manual, which outlines the essentials of a disaster plan, and the ARL Preservation Program Planning Manual, which gives the basic outline for developing the plan via the committee approach.

   d. The committee should receive a very high priority within the CSUL administration, and should be constituted with all due haste.

2. Mechanisms for Minor Disasters.

   This is the part of the disaster plan that in all likelihood would be used most frequently. The Preservation Librarian should be assigned the responsibility for organizing a group of staff members to respond to minor disasters such as water leaks, etc.

F. MONITORING AND EVALUATION

The Study Team recommends that it be reconvened one year after the date of submission of this report for a single meeting to evaluate progress and submit a report on that subject to the Director of Libraries.